

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application:

5 **Listing of Claims:**

1. (Original) A display panel comprising:

a silicon substrate having a plurality of pixels arranged in a pixel array thereon, each of the pixels comprising a plurality of subpixels;

10 a transparent substrate positioned above the silicon substrate, the transparent substrate having a top surface and a bottom surface;

a liquid crystal layer positioned between the transparent substrate and the silicon substrate; and

15 a plurality of micro color filters positioned on the top surface of the transparent substrate, each of the micro color filters being positioned corresponding one of the subpixels.

2. (Currently amended) The display panel of claim 1 further comprising a transparent conductive layer positioned on the bottom surface of the transparent substrate while the micro color filters are positioned on the top surface of the same transparent substrate
20 but opposite to the transparent conductive layer.

3. (Original) The display panel of claim 2, wherein the transparent conductive layer is an indium tin oxide (ITO) layer.

25 4. (Original) The display panel of claim 1 further comprising a top alignment layer positioned between the transparent substrate and the liquid crystal layer.

5. (Original) The display panel of claim 1 further comprising a bottom alignment layer positioned between the silicon substrate and the liquid crystal layer.

6. (Original) The display panel of claim 1, wherein the transparent substrate is a glass substrate.

7. (Original) The display panel of claim 1, wherein the micro color filters comprise a plurality of red micro color filters, a plurality of blue micro color filters, and a plurality of green micro color filters, each of the red micro color filters, the blue micro color filters, and the green micro color filters being positioned corresponding one of the subpixels of each of the pixels.

8. (Original) The display panel of claim 7, wherein the micro color filters comprise photosensitive materials.

9. (Original) The display panel of claim 8, wherein the red micro color filters, the blue micro color filters, and the green micro color filters further comprise red, blue, and green dyes.

10. (Original) The display panel of claim 8, wherein the photosensitive materials are photoresist materials or photoresist resins.

11. (Original) The display panel of claim 7, wherein each of the micro color filters comprises a plurality of optical thin films.

12. (Original) The display panel of claim 11, wherein the optical thin films are dichroic films.

13. (Original) The display panel of claim 11, wherein each of the micro color filters is an optical thin-film stack.

14. (Original) The display panel of claim 13, wherein the optical thin-film stacks are low
5 index optical thin-film stacks comprising silicon oxide (SiO₂) thin films.

15. (Original) The display panel of claim 13, wherein the optical thin-film stacks are high
index optical thin-film stacks comprising titanium oxide (TiO₂) thin films or
tantalum oxide (Ta₂O₅) thin films.

10 16. (Original) The display panel of claim 11, wherein when light enters the display panel,
lights of a first specific spectrum, a second specific spectrum, and a third specific
spectrum are capable of passing through the corresponding micro color filters.

15 17. (Original) The display panel of claim 16, wherein lights of the first specific spectrum,
the second specific spectrum, and the third specific spectrum are red, blue, and green
lights respectively.

18. (Original) A display panel comprising:

20 a silicon substrate having a pixel region thereon;

a transparent substrate positioned above the silicon substrate, the transparent
substrate having a top surface and a bottom surface;

a liquid crystal layer positioned between the silicon substrate and the transparent
substrate; and

25 at least a color filter positioned on the top surface of the transparent substrate and
corresponding to the pixel region.

19. (Currently amended) The display panel of claim 18 further comprising a transparent

conductive layer positioned on the bottom surface of the transparent substrate while the color filter is positioned on the top surface of the same transparent substrate but opposite to the transparent conductive layer.

5 20. (Original) The display panel of claim 18, wherein the transparent conductive layer is an indium tin oxide layer.

21. (Original) The display panel of claim 18 further comprising a top alignment layer positioned between the transparent conductive layer and the liquid crystal layer.

10

22. (Original) The display panel of claim 18 further comprising a bottom alignment layer positioned between the silicon substrate and the liquid crystal layer.

15

23. (Original) The display panel of claim 18, wherein the transparent substrate is a glass substrate.

24. (Original) The display panel of claim 18, wherein the color filter comprises a photosensitive material.

20 25. (Original) The display panel of claim 24, wherein the photosensitive material comprises at least a color dye.

26. (Original) The display panel of claim 24, wherein the photosensitive material is a photoresist material or a photosensitive resin.

25

27. (Original) The display panel of claim 18, wherein the color filter is an optical thin-film stack comprising a plurality of optical thin films.

28. (Original) The display panel of claim 27, wherein the optical thin films are dichroic films.

29. (Original) The display panel of claim 27, wherein the optical thin-film stack is a low
5 index optical thin-film stack comprising a silicon oxide (SiO₂) thin film.

30. (Original) The display panel of claim 27, wherein the optical thin-film stack is a high
index optical thin-film stack comprising a titanium oxide thin film or a tantalum
oxide thin film.

10

31. (Previously presented) The display panel of claim 1, wherein the silicon substrate
comprises a semiconductor material.

32. (Previously presented) The display panel of claim 1, wherein the display panel is a
15 liquid crystal on silicon (LCOS) display.

33. (Previously presented) The display panel of claim 18, wherein the silicon substrate
comprises a semiconductor material.

20 34. (Previously presented) The display panel of claim 18, wherein the display panel is an
LCOS display.

35. (Previously presented) The display panel of claim 18, wherein the silicon substrate
comprises a plurality of subpixels arranged in the pixel region, and the display panel
25 comprises a plurality of the color filters, each of the color filters being positioned
corresponding to one of the subpixels in the pixel region.

36. (Previously presented) The display panel of claim 35, wherein the color filters are

micro color filters.

37. (Previously presented) The display panel of claim 36, wherein the micro color filters
comprise a plurality of red micro color filters, a plurality of blue micro color filters,
5 and a plurality of green micro color filters, each of the red micro color filters, the
blue micro color filters, and the green micro color filters being positioned
corresponding one of the subpixels of each of the pixels.

38. (Previously presented) The display panel of claim 36, wherein the micro color filters
10 comprise photosensitive materials, and the red micro color filters, the blue micro
color filters, and the green micro color filters further comprise red, blue, and green
dyes.

39. (Previously presented) The display panel of claim 37, wherein when light enters the
15 display panel, lights of a first specific spectrum, a second specific spectrum, and a
third specific spectrum are capable of passing through the corresponding micro color
filters.

40. (Previously presented) The display panel of claim 39, wherein lights of the first
20 specific spectrum, the second specific spectrum, and the third specific spectrum are
red, blue, and green lights respectively.

41. (New) The display panel of claim 1, wherein the top surface of the transparent
substrate is a light exit surface of the display panel so that the micro color filters are
25 positioned on the light exit surface of the display panel.

42. (New) The display panel of claim 18, wherein the top surface of the transparent
substrate is a light exit surface of the display panel so that the color filter is

Appl. No. 10/710,506
Amdt. dated September 28, 2006
Reply to Office action of July 17, 2006

positioned on the light exit surface of the display panel.